

THE ROLE, PURPOSE AND FUTURE OF THE QUARRIES NATIONAL JOINT ADVISORY COMMITTEE (QNJAC) AND ITS GEOTECHNICAL, FACE AND STOCKPILE OPERATIONS SUBCOMMITTEE

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ABSTRACT

QNJAC is an eclectic alliance of professionals from the extractive minerals industry; HSE, trade associations, employees, academic institutions and senior mineral industry representatives. The committee has several aims including producing specific guidance and training materials for the quarrying industry. Outputs from QNJAC should be reviewed in conjunction with the Quarries Regulations 1999.

Multiple subcommittees operate within QNJAC and this paper describes the work of the Geotechnical, Face and Stockpile Operations Subcommittee. The subcommittee outputs in 2013 have strategically shifted to the production of QNJAC branded material for technical meetings, seminars and publications. The aim is to promote industry good practice and common regulatory understanding relating to geotechnics and face/stockpiling operations.

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INTRODUCTION: THE ROLE, PURPOSE AND AIMS OF QNJAC

The QNJAC (Quarries National Joint Advisory Committee) includes members of the HSE (Health and Safety Executive), trade associations, employees, academic institutions as well as senior mineral industry representatives. Members must be “persons whose responsibilities include the development of health and safety policies and implementation strategies” in the industry (HSE, 2013).

The aim and objectives of QNJAC are to promote health and safety throughout quarrying and associated industries via an agreed work programme. The work programme discusses the application and implementation of existing health and safety legislation. It also provides a forum to explain the HSE operational policy, consults on draft legislation and European proposals and discusses draft material from HSE, trade associations, trade unions and other interested parties. The QNJAC work programme also includes a commitment to raise health and safety concerns of the quarrying and associated industries with manufacturers and suppliers of plant, machinery and equipment, and it aims to raise standards and the competence of employees. Output from the work programme provides industry guidance on a range of Health and Safety topics.

Subcommittees support the main committee, working on a range of specific topics and producing output related to those topics. These subcommittees include;

Geotechnical, Contractors, Explosives and Plant. The outputs from these subcommittees are made into guidance or tool box talks for ease of presentation to the workforce.

This industry-wide collaboration has been recognised by HSE and the British Government as evidence of good practice. This has been reinforced by the success of the QNJAC/HSE Target Zero 2000-2011 initiative, where accident rates have progressively decreased on a 5 year rolling average. However, although in the past 3 years minor accident rates have remained constant, major accidents have unfortunately increased over 3 of the last 4 years. This has resulted in QNJAC reviewing how they promote their guidance. Consequently a ‘kitemark’ of approved quality has been devised in the form of a QNJAC brand, to identify endorsed material/presentations with an instantly recognisable logo. The branding, shown in Figure 1 was launched in 2012 and is being promoted through social media, publications and presentations. The vision is to increase the accessibility of the QNJAC guidance so it is available to all employees.



Figure 1. QNJAC branding launched in 2012.

GEOTECHNICAL, FACE AND STOCKPILE OPERATIONS SUBCOMITTEE

The Geotechnical, Face and Stockpile operations subcommittee is composed of representatives from the HSE Inspectorate, geological and geotechnical professionals, safety professionals and employee representatives. The role and purpose of the subcommittee is to provide guidance on key geotechnical, face and stockpiling issues and to propose good practice solutions. It also aims to provide clarity on any ambiguity encountered in relevant, current or future legislation.

The committee identifies areas/issues to work on from current safety issues identified through incidents or near misses. It also reviews current legislation and its application. The subcommittee outputs are endorsed by all members of the committee, by a HSE legal review and the QNJAC committee. This process usually takes about 12 months with several projects being worked on in parallel. QNJAC outputs are made available for dissemination throughout the industry on the Safe Quarry website (<http://www.safequarry.com>). Table 1 shows the information sheets and toolbox talks published to date on safequarry.com. Outputs which are in the process of being produced by the committee are also shown. An example of the subcommittee output, being an extract from Information Sheet 2 is shown in Figure 2.

FUTURE DIRECTION OF THE GEOTECHNICAL, FACE AND STOCKPILE OPERATION SUBCOMITTEE

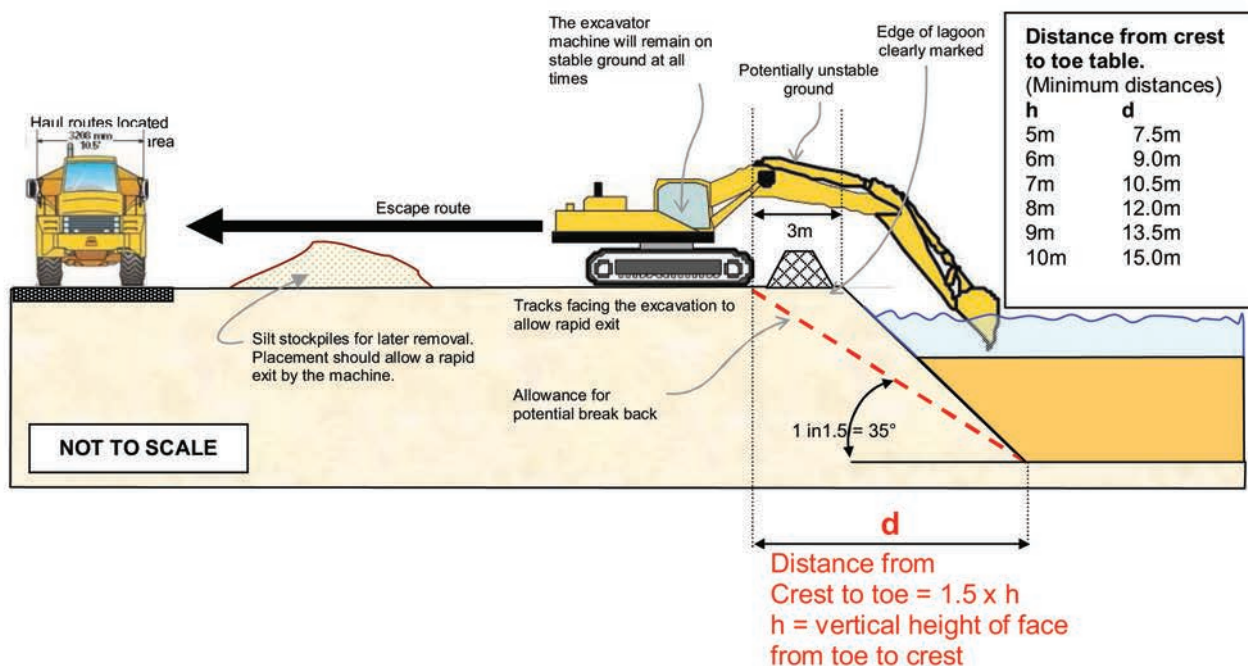
The Geotechnical subcommittee outputs are strategically shifting from the provision of guidance information in the form of information sheets and tool box talks, and disseminated via the safequarry website, to the production of QNJAC branded/endorsed geotechnical materials, technical meetings, seminars and publications. The aim is to promote industry good practice and a common regulatory understanding of geotechnics and face operations.

In 2013 the first series of regional seminars were launched on ‘Essential Geotechnics for Quarrying’. These half day seminars are aimed at all those who work in the quarrying industry, including contractors and cover aspects of geotechnics that the subcommittee has produced guidance on previously (Table 1). The materials and seminars are identified using the new QNJAC brand, shown in Figure 1 and the seminars are Continued Professional Development (CPD) accredited by the Institute of Quarrying (Agg-net, 2013).

Subcommittee Guidance	Published on safequarry.com
Information Sheet 1: Guidance on safe face management operations in quarries.	July 2009
Information sheet 2: Guidance on excavation and tips rules in quarries.	June 2011
Information Sheet 3: Guidance on managing change to excavations or tips.	November 2011
Information sheet 4: Duties of the Operator.	January 2013
<i>Information Sheet 5: Guidance on quarry design relating to excavations, tips and stockpiles.</i>	<i>In progress Target 2013</i>
<i>Information Sheet 6. Guidance on suspended and closed sites.</i>	<i>In progress</i>
Tool Box Talk: Face Operations: 01. Inspections of rock faces	January 2013
<i>Tool Box Talk: Face / Stockpile Inspections.</i>	<i>In progress</i>

Table 1. Guidance published or in the process of being produced, by the Geotechnical subcommittee.

Cleaning out a silt lagoon with an excavator



The main risks when cleaning out a silt lagoon are created either by undercutting and making unstable the embankment, particularly below water or by a machine driving onto soft ground that cannot support the machines weight.

Silt lagoons can be deceptive, they form a crust which appears stable, but the silt remains soft beneath. To manage this risk the guidance below will be followed:-

Pre Commencement Planning

- A risk assessment will be carried out to identify the appropriate machinery

Inspection and monitoring

- Regular inspections of the operational area will be carried out by the Quarry Manager or appointed competent person.
- The inspections will be at a frequency that is appropriate for the operation, but no less than daily
- The operator working the machine will constantly monitor the crest of the lagoon for sign of slumping, cracking or instability.
- Upon observing any signs of instability, all work will be suspended; personnel and machinery removed and access prohibited. The operator will inform management and geotechnical advice will be sought if required.

Method

- Work in accordance with the diagram above
- Access onto the silt is not permitted unless capped and stabilised and authorised by the Unit Manager.
- Care will be taken to only remove silt as planned and not excavate the lagoon retaining structure.
- The edge of the silt pond will be clearly demarcated at all times, ideally by barriers such as a bund.
- The excavator will be as far from the lagoon edge as operationally possible and will be capable of obtaining the necessary depth of dig whilst maintaining the required stand-off
- The excavator's tracks will be perpendicular to the lagoon edge such that a safe, rapid exit from the area can be made if slope instability develops.
- The excavated silt will be cast as far away from the crest of the lagoon as possible so as to prevent loading of the crest which could cause failure. The placement of silt must not block the safe exit route of the machine.
- When not in use all machinery will be parked in a safe location away from the waters edge.

Figure 2. Extract from QNJAC approved material; Information sheet 2 (March 2011), Guidance on excavation and tip rules in quarries.

REFERENCES

Agg-net. 2013. <http://www.agg-net.com/news/qnjac-launches-geotechnical-cpd-seminars>. Accessed 22nd November 2013.

Health and Safety Executive (HSE). 2013. <http://www.hse.gov.uk/aboutus/meetings/committees/qnjac/terms.htm>. Accessed 22nd November 2013.

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